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Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

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CONTENTS

ASIA

CANADA

LATIN AMERICA

ARGENTINA

BRAZIL

NEAR EAST/SOUTH ASIA

USSR

WEST EUROPE

MITI READY TO GIVE ATOMS-FOR-PEACE AID TO PRC

OW301205 Tokyo KYODO in English 0911 GMT 30 Oct 84

[Text] Tokyo, Oct. 30 KYODO--The Ministry of International Trade and Industry (MITI) is ready to extend positive cooperation to China in the field of nuclear energy as an atoms-for-peace agreement with China is likely to be signed as early as the end of the year, MITI officials said Tuesday. The sources said the MITI's agency of natural resources and energy intends to meet positively a strong request by China for technological cooperation in refining uranium ore and enriching refined uranium, and assist Japanese private enterprises in exporting atomic power plants and equipment to China. The ministry is attaching importance to China as a promising export market for the Japanese atomic industry, they said.

According to the sources, China has sought Japanese technological cooperation in concentrating crude uranium ore into uranium ore concentrate (generally called "yellow cake") in northern Hebei for export. MITI intends to cooperate in the Chinese project, since this will contribute toward diversification of Japan's uranium supply sources, they said. They said the ministry and private interests have begun joint study into the economic feasibility of the project.

China plans to construct atomic power plants with a combined generating capacity of 10 million kilowatts up to 2000. Under present plans, four atomic power stations will be built in four regions. One atomic power station is estimated to cost more than 200 billion yen (813 million dollars). West Germany, Britain, France and other countries are negotiating with China to win orders for atomic power plants and equipment. Japan's Mitsubishi Heavy Industries, Ltd. is also making approaches to China in an attempt to obtain orders.

CSO: 5100/4500

ATOMIC POWER PLANT NEGOTIATIONS WITH PRC VIEWED

OW291259 Tokyo KYODO in English 0700 GMT 29 Oct 84

[Text] Tokyo, Oct. 29 KYODO--Mitsubishi Heavy Industries, Ltd. is sending a senior executive to Beijing soon for negotiations with China over the construction of an atomic power station, reliable sources said Monday. A Mitsubishi spokesman declined comment on the report.

However, the sources said Yotaro Iida, executive vice president of Mitsubishi, hoped to visit the Chinese capital next month to start talks with the Chinese Ministry of Water Resources and Electric Power over an atomic power plant project. The project calls for the construction of two 1-million-kilowatt capacity atomic power plants of the pressurized water reactor (PWR) type in China's mideast region.

The Chinese ministry plans to place a power plant contract on a full-turnkey basis, they said. The Chinese ministry is now negotiating with West Germany's Kraftwerke Union (KWU) and France's Framatome over the construction of the two plants.

The export of atomic power plant requires the conclusion of a bilateral government-to-government agreement on cooperation in the peaceful application of atomic energy. According to official sources, China signed an atoms-for-peace agreement--a kind of administrative agreement--with West Germany in May, and the accord came into force. China also exchanged memoranda last year with France on the export of equipment necessary for the construction of two 900,000-kw capacity PWR atomic power plants in Guangdong during French President Francois Mitterrand's visit.

Japan is yet to conclude such an agreement with China. Negotiations have been underway between the two countries since last October. The sources said negotiations have faced difficulties over the clause on the inspection of nuclear facilities. But, "one hurdle is being cleared, and a ray of hope has begun to be seen," a source said.

They noted that the atoms-for-peace agreement, already signed between Brazil and China, has a clause calling for inspection of nuclear facilities by the International Atomic Energy Agency (IAEA). The sources said the Japanese Government has already received a Chinese draft for the proposed agreement. The government is now studying the Chinese draft in detail. They said that

the Japanese and Chinese negotiators would meet next for talks over the accord after important political events, both in China and in Japan, are over--probably early this winter.

Mitsubishi Heavy Industries earlier won a Chinese order for a pressure reactor container for installation at the projected Qinshan atomic power station.

CSO: 5100/4500

EXPERIMENTAL NUCLEAR FUSION DEVICE UNVEILED

OW060925 Tokyo KYODO in English 0908 GMT 6 Nov 84

[Text] Naka, Ibaragi Pref., Nov. 6 KYODO--The government-run Japan Atomic Energy Research Institute Tuesday unveiled an experimental plasma heating device here to mark another step toward Japan's nuclear fusion project. The JT-60 plasma heater, which has been built at a cost of 230 billion yen (946 million dollars), is scheduled to go into operation next April for critical plasma heating experiments.

The doughnut-shaped Tokamak, one of four built in the world, is designed to raise magnet-trapped hydrogen plasma to 100 million degrees centigrade and hold the temperature to one second--a critical condition for ceration of nuclear fusion.

Officials at the Atomic Energy Research Institute said they plan to carry a series of experiments leading to the creation of super-heated plasma by 1987.

Similar Tokamak devices have also been built in the Soviet Union, the United States and the European Community.

CSO: 5100/4500

ENVOY TELLS IAEA OF PRC NUCLEAR ENERGY STAND

OW132018 Beijing XINHUA in English 1949 GMT 13 Nov 84

[Text] United Nations, Nov. 13 (XINHUA) -- The United Nations General Assembly this morning adopted a resolution urging all states "to strive for effective and harmonious international cooperation" in promoting the peaceful use of nuclear energy. The resolution marked the conclusion of the debate on the report of the International Atomic Energy Agency (IAEA), which began yesterday afternoon. It affirms the confidence of the General Assembly in the IAEA's role in the application of nuclear energy for peaceful purposes.

It urges the member states to cooperate fully with the IAEA in increasing technical assistance to developing countries, in ensuring the effectiveness and efficiency of the agency's safeguards system, and in promoting nuclear safety.

Founded in July, 1957 as one of the intergovernmental agencies under the aegis of the United Nations, the iaea has twin objectives: the promotion of nuclear energy's contribution to universal peace, health and prosperity, and the prevention of nuclear proliferation.

In his address before the General Assembly, Qian Jiadong, China's ambassador in charge of disarment affairs, commented that the IAEA had done "a lot of useful work for the peaceful use of nuclear energy in the interest of mankind". However, he noted, the development of nuclear power was "unbalanced" at present. According to the 1983 annual report of the agency, of the more than 300 nuclear power plants operating in the world, only about a dozen are located in the developing countries. This state of affairs, he said, "is far from satisfactory," and "how to assist these (developing) countries in developing nuclear power is, therefore, a major task confronting the agency."

On the question of nuclear non-proliferation, he stated that China was well aware of the importance of the prevention of nuclear proliferation and the appropriate measures adopted in this regard. "However", he stressed, "we do not favor using non-proliferation as a rationale to unduly impose unreasonable restrictions on nuclear energy cooperation to impede its development."

Reiterating China's "positive and responsible" stand in this regard, he said: "China is critical of the discriminatory 'treaty on the non-proliferation of nuclear weapons' and has declined to accede to it. But we by no means favor nuclear proliferation, nor do we engage in such proliferation by helping other countries to develop nuclear weapons." "This is the fundamental policy that China pursues in carrying out nuclear power cooperation with other countries," he said. "Guided by this policy, China had made sure that the nuclear materials and equipment it exports or imports are used for peaceful purposes only."

CSO: 5100/4120

HONG KONG REACHES AGREEMENT WITH PRC ON DAYA NUCLEAR PLANT

HK260353 Hong Kong SOUTH CHINA MORNING POST in English 26 Nov 84 pp 1, 20

[By Albert Chan]

[Excerpt] The complex and protracted negotiations between China and Hong Kong's China Light and Power Co over the multi-billion-dollar Daya Bay nuclear plant have finally ended. Top officials from China came to Hong Kong last week to hold the last round of talks with China Light and Power and all the outstanding differences have now been ironed out. This comes just one year after the government announced its go-ahead for Hong Kong's involvement in the project.

The draft contract will now go to the Hong Kong and Chinese Governments for their approval before the two parties sign it in Peking.

in Hong Kong, the Economic Services Branch and the Executive Council will vet the draft contract, while in Peking, the Ministry of Water Resources and Electric Power will check it over. The contract will then be sent to China's Ministry of Foreign Economic Relations and Trade, which is now headed by Miss Chen Muhua, for final endorsement.

The exact date for signing the contract depends on how long the two Governments take, and is expected to be late this year or early next year. The complex negotiations involve the setting up of the Guangdong Nuclear Power Joint Venture Co which will own and operate the plant.

The partners in the venture are Hong Kong Nuclear Investment Co (HKNIC), which will have a 25 percent stake, and Guangdong Nuclear Investment Inc (GNI) which will own 75 percent.

China Light and Power is the sole investor in HKNIC after it failed to attract Hong Kong Electric Co into the project.

The contract is in five basic sections:

-- The joint venture contract.

-- The articles of association of the joint venture company.

-- The electricity sale contract between the joint venture company and HKNIC.

-- The electricity sales contract between the joint venture company and GNI.

-- The electricity resale contract between GNI and HKNIC.

Since China Light and Power only has a 25 percent stake in the project, the electricity resale contract is needed for HKNIC to buy the agreed 70 percent of the electricity generated by the plant. It has also been decided that the future board of directors of the joint venture company will have 17 members -- 12 from China and 5 from China Light and Power. But the chairman, who will be from China, and the two vice-chairmen -- one from HKNIC and the other from China -- have not yet been named.

It now appears unlikely that Mr Peng Shilu, Vice-Minister at the Ministry for Water Resources and Electric Power and one of the key people behind the project, will head the board. This follows the recent policy announcement by Peking that officials should stay clear of commercial ventures.

The two parties will nominate their board members after the signing of the contract for the joint venture company, and only then will the chairman be named.

The contract also includes a guarantee that the price of electricity from the nuclear plant will not be higher than power from coal-fired plants, although the exact price in dollars and cents has not been specified. "It is impossible to put down a figure at this stage," a source said. "There are still 6 or 7 years before the plant goes into operation."

Officials from both China and China Light and Power, however, expect electricity prices will fall when the plant is commissioned.

The long negotiations are understood to have been partly due to China Light and Power's reassessment of electricity cost forecasts. Some 4 years ago, when the two sides first began looking at the project, oil and coal prices were rising steadily and it seemed likely the trend would continue. This made the nuclear option attractive. But as the two sides began detailed negotiations last year, coal and oil prices started to stabilise and even showed signs of falling. This forced China Light and Power to rethink the situation and to reassess the wisdom of investing in nuclear power.

The other obstacle in the negotiations is said to have been concern about the project expressed by Esso, China Light and Power's partner in Hong Kong. The huge American oil company is a partner with China Light in the Castle Peak, Tsing Yi and Hok Un power stations.

CSO: 5100/4122

PRC NUCLEAR PLANT CONTRACT WITH JORDAN FIRM DENIED

HK290503 Hong Kong SOUTH CHINA MORNING POST in English 29 Nov 84 p 16

[Article by Albert Chan]

[Text] A reported deal between a Jordanian company and China for the construction of four nuclear power plants -- including the Daya Bay project -- may be non-existent. Reports of the US$7 billion (about HK$54.6 billion) deal started to circulate in August after a Jordanian weekly magazine, the JERUSALEM STAR, published an article which claimed United Trading Co (UTC) of Jordan had signed a contract with China to provide four nuclear power plants on a turn-key basis. Despite the fact the UTC has no known experience in nuclear plant construction, other European newspapers and magazines, including the popular NEW SCIENTIST, subsequently followed up with further reports on the deal. The latest issue of the London-based MIDDLE EAST MAGAZINE says "several leading nuclear companies have confirmed the existence of the contract and many are already negotiating with UTC." These companies include BBC Brown Boveri of Switzerland and Bechtel of the United States.

The contract was signed between UTC and China's Ministry of Water Resources and Electric Power on July 31, the article said, quoting a UTC spokesman. "Under the contract, the company has full responsibility for putting together packages for the design, supply, construction and financing of the plants," the magazine said. "Western firms will have to go through UTC rather than dealing with the Chinese directly."

A senior Chinese official who was involved in the Daya Bay project told the SCM [SOUTH CHINA MORNING] POST UTC did indeed hold discussions with the Chinese Government in July this year. It was UTC which initiated the discussions, he said. "They came to us and said they were able to arrange loans at a very low interest rate -- seven per cent to be exact -- with a guarantee from the Bank of China.

"We said this was not possible and asked if they could immediately get a US$1 billion loan on their suggested terms. They couldn't. The deal is now over," the official said.

Mr Hu Zhanpeng, spokesman for Mr Peng Shilu, vice-minister at the Ministry of Water Resources and Electric Power, said he had heard about the company and the reported deal, but he categorically denied that any contract was signed. "The so-called contract could well be minutes of certain meetings," he said. Chinese officials were, however, cautious in their comments. "This time, we weren't able to strike a deal but perhaps next time we might. China still maintains very good relations with Jordan," said one.

Mr Taj Hajjar, president of UTC, arrived in Hong Kong last week after holding business talks in several parts of China. Mr Hajjar would only say nuclear plant construction was not discussed during his trip to China. He would not comment on the reported nuclear plant deal, nor any of his other business with China. Mr Hajjar met the head of Peking-backed Ever Bright Industrial Co, Mr Wang Guangying, on Friday morning but it is not known what they talked about.

According to MIDDLE EAST MAGAZINE, UTC director Mr Radwan Hajjar insists the company has signed a nuclear plant construction contract with China and not a letter of intent. China was reported to have chosen the little-known Jordanian company after Peking became impatient about its negotiations with the United States, France and other countries over technology transfer issues.

CSO: 5100/4123

LI PENG MEETS JAPANESE VISITOR ON NUCLEAR ENERGY

Views Exchanged

OW240916 Beijing XINHUA in English 0848 GMT 24 Nov 84

[Text] Beijing, November 24 (XINHUA) -- Chinese Vice-Premier Li Peng met here today Michiyuki Isurugi, former director-general of the Science and Technology Agency of Japan. They exchanged views on promoting the cooperation of the nuclear energy between the two countries.

Li Accepts Nuclear Inspection

OW241311 Tokyo KYODO in English 1247 GMT 24 Nov 84

[Text] Beijing, Nov. 24 KYODO -- China said Saturday Beijing will accept an international inspection of China's nuclear power generation facilities to ensure that imported nuclear power equipment and fuel will be exclusively used for non-military purposes.

The pledge, made by Vice Premier Li Peng in a meeting with Japan's former Science and Technology Agency Director General Michiyuki Isurugi, clears the way for China's import of nuclear plant equipment from Japan and other Western nations.

Isurugi said Li told him that China will accept inspection by the International Atomic Energy Agency to ensure that nuclear power generation equipment and nuclear fuel to be imported from Japan would not be diverted to military use. China has sought Japanese help for developing its nuclear-power industry, but negotiations hit a snag over the inspection issue in October of last year.

Li also told Isurugi that China is negotiating with IAEA in order to work out an agreement over inspection procedures. Li's assurance could lead to a Sino-Japanese bilateral agreement on nuclear cooperation before China works out inspection arrangements with IAEA.

China joined the IAEA last year but, as a nuclear power, it rejected on-the-spot international inspection of its nuclear facilities. The Paris-based IAEA is an international watch-dog body in charge of policing worldwide nuclear power policies.

CSO: 5100/4122

DAYA BAY NUCLEAR PLANT COST ESTIMATE REDUCED

HK270559 Hong Kong SOUTH CHINA MORNING POST in English 27 Nov 84 pp 1, 16

[Article by Albert Chan]

[Text] **The Daya Bay nuclear plant in Shenzhen, China's first ever commercial nuclear station, is expected to cost $8.6 billion less than originally estimated, the chairman of China Light and Power [CLP] Co, Lord Kadoorie, disclosed yesterday in his year-end review.**

The official estimate put forward by the Government and CLP was $36 billion, which took into account forecast inflation and interest on loans. The amended figure released yesterday was $27.4 billion. But both figures exclude the $3 billion needed to construct the transmission network for supply of electricity from Daya Bay to Hong Kong.

A spokesman for the company said the difference in estimates was due to clearer forecasts from the two major equipment suppliers, Framatome of France and GEC of Britian, now that negotiations had reached final stages.

The SCM [SOUTH CHINA MORNING] POST learnt that the two companies had asked for about $6.38 billion for their equipment, but sources stressed that the final figure was still subject to negotiation.

Framatome's quote was US$523 million (about HK$4.08 billion) for its twin 900-megawatt nuclear reactors, while GEC was willing to sell its turbine generators for US$295 million (about HK$2.3 billion), reliable sources said. But it is believed the Chinese negotiators consider these figures too high. Discussions in the coming few months will be devoted to price as the technical talks are almost over.

As much as 90 per cent of the $27.4 billion needed to build the plant will be provided by syndicated loans to be arranged by the Bank of China while the rest will be shouldered by Guangdong Nuclear Investment Co (GNIC) and Hong Kong Nuclear Investment Co (HKNIC) in a 3:1 proportion. (These two companies will form a joint venture company to own and operate the plant.)

It is intended that NKNIC will invest about $800 million into the project of which $300 million will be equity and $500 million will be loans guaranteed by the Hong Kong Government.

CLP, which is now the sole party in HKNIC, said yesterday it was willing to pump in $200 million in cash of the $300 million required. The spokesman said CLP was willing tomake up the balance if no other party could be attracted into the project.

Lord Kadoorie told the SCM POST last night that the signing of the joint venture contract between HKNIC and GNIC was expected to take place in two months. "I presume it would take place in Peking because of the importance of the project," he said.

In his annual review, Lord Kadoorie said the plant permitted the deferment of investment in a further coal-fired power station. He also said the forecasts showed that the cost of nuclear-generated electricity would be lower than that of equivalent coal-fired generation in Hong Kong.

It was also disclosed yesterday that almost twice as much electricity was sold to Guangdong this year compared with last year. Lord Kadoorie said this reflected the "intensive development" by China in the Shenzhen Special Economic Zone. As a result, a new "inter-connection circuit" linking Taipo and Shezhen is now being planned to reinforce supplies. The project is expected to be completed some time next year. CLP also offered a four-month training programme for engineers from Guangdong Power Co at the Castle Peak coal-fired station.

Concluding his review, Lord Kadoorie said CLP's future would "increasingly rest with China" and that the Daya Bay project was "but a start to a series of other joint ventures" between CLP and China. He did not go into details. CLP's electricity sales record, which was also released yesterday, showed a marked increase in demand from the manufacturing sector, especially in the spinning and weaving industries. Sale of electricity to the manufacturing sector was up 13.4 per cent on last year's figure. "This marked increase is most encouraging in view of the political uncertainties which prevailed during the earlier part of the year," Lord Kadoorie said. But there was a drop in demand by the Mass Transit Railway as a result of its energy conservation programme. CLP continued its trend of reducing staff this year. The company now has 7,051 employees, down from 7,234 in 1983 and 7,427 in 1972.

This was achieved despite rapid expansion of the system and additional generating capacity and "reflects a marked overall improvement in productivity," according to Lord Kadoorie.

CSO: 5100/4123

NUCLEAR REACTOR RESEARCH PROJECT WITH SOUTH KOREA CANCELED

Toronto THE GLOBE AND MAIL in English 16 Oct 84 p 5

[Article by Paul Taylor: "Ottawa Denies U.S. Killed A-Deal"]

[Text]

The Department of External Affairs has flatly denied that the United States pressed Canada into cancelling a research project with South Korea for fear Korea might develop its own atomic bomb.

"This whole thing has become quite overblown," Sean Brady, an External Affairs spokesman, said yesterday.

"It's correct that we were examining, with the Koreans, the possibility of carrying out a long-term research project in co-operation with the United States. But we were completely satisfied that the proposed project was consistent with Canada's nuclear non-proliferation commitments."

Atomic Energy of Canada Ltd. proposed that spent fuel from a U.S.-built nuclear reactor be reused in a Canadian Candu reactor in Korea. The aim was to reduce the operating cost of the Candu by recycling fuel, but a by-product would have been plutonium — which can be used for weapons.

Mr. Brady said the project needed approval from all three nations and "for a variety of reasons" the United States refused.

Cathleen Lang, a U.S. State Department official, says the U.S. veto was not influenced by fears that Korea might build a bomb, but refused to say what the reason was.

Some observers suggest Washington feared the project might increase tensions with the Soviet Union and undermine the U.S. bargaining position in disarmament talks. One official said: "The Koreans might have no intention of building a bomb, but the United States' involvement in such a research project still looks bad."

CSO: 5120/6

FORMER DEFENSE COLLEGE HEAD URGES NUCLEAR DISARMAMENT

Ottawa THE CITIZEN in English 1 Oct 84 p A3

[Text]

KINGSTON (CP) — A month after retirement, the former commandant of the National Defence College has called on the United States and its allies to seriously consider unilateral nuclear disarmament.

Maj.-Gen. Leonard Johnson also said Canada should consider dropping out of NATO and joining other non-nuclear members of the alliance to strengthen the United Nations.

In an interview with the Kingston *Whig-Standard*, Johnson condemned nuclear warfare as a threat to the survival of the human species.

"Bad means have overwhelmed good ends, and warfare among nuclear-armed states can no longer achieve any desirable outcome," he said. "Nuclear weapons have no utility in war."

Johnson said members of NATO — not the Soviet Union — are more apt to begin a nuclear war.

The NATO policy of first-use of nuclear weapons is "a bluff, dependent on the credibility of willful acquiescence to an irrational and suicidal act," he said.

Johnson, 55, joined the Royal Canadian Air Force 34 years ago and in 1980 was appointed head of the defence college, the highest educational institution in Canadian defence. An advanced graduate school for senior officers and management executives in the private and public sectors, it specializes in aspects of national and international affairs which determine Canadian security.

In retirement, Johnson said he will promote his opinions as the only North American member of an international veterans' peace group called Generals for Peace and Disarmament.

Johnson also said he opposes the testing of U.S. cruise missiles over Canada, even though he supported the tests while he was commandant at the defence college.

He wants NATO to lengthen the response time of its nuclear retaliatory forces to days or weeks instead of hours and minutes.

Central Europe should be declared a nuclear-free zone, he said. And the superpowers should then negotiate a withdrawal of all foreign forces from Europe, with European nations maintaining their own conventionally-armed forces at the lowest possible level.

Before Johnson became commandant of the defence college in 1980, he served as commander of the Canadian Forces training system at CFB Trenton and was vice-chief of defence staff for special projects at National Defence Headquarters in Ottawa.

He also served as associate assistant deputy minister for defence policy during the short-lived Joe Clark government.

CSO: 5120/6

DARLINGTON NUCLEAR PLANT CALLED 'MASSIVE,' 'COSTLY'

Toronto THE TORONTO STAR in English 1 Oct 84 p A17

[Article by Alan Christie]

[Text] How do you fight a beast the size of 20 CN Towers, still growing on the shores of Lake Ontario?

Don't ask the Ontario Legislature's public accounts committee, because it doesn't have the weapons to challenge it.

Don't ask the provincial auditor, who's tried to examine why it's costing $10.9 billion to feed the beast, because its owners, Ontario Hydro, keep tight control of the food supply.

And don't ask a contractor trying to build a place for the beast, because it's just too big and he's just too small.

The beast, as Liberal MPP Pat Reid calls it, is Ontario Hydro's Darlington nuclear plant in the town of Newcastle. It's one of the world's largest mega-projects, scheduled for completion in 1992.

'Too Big'

Reid is chairman of the Legislature's public accounts committee and recently, at the invitation of Hydro, the committee visited Darlington and another nuclear plant down the road, in Pickering. The visit helped, Reid said, but Darlington is "just too big a beast for the committee to grapple with."

Just how big it is depends on what figures you use. Hydro uses various sets of them to show the cost of building Darlington. There's the "study estimate," the "released estimate," the "definitive estimate," the "currently approved estimate" and the "current estimate."

The committee is using a provincial auditor's report, asked for last October, to help it sort out the costs.

Therecently released report states: "The estimated costs for Darlington increased by $6.4 billion or 128 per cent between the release estimate ($5 billion, June, 1978) and the currently approved estimate ($11.4 billion, November,1983).

"However, Hydro measures management performance by comparing the estimated costs of the definitive estimate ($7.5 billion, August, 1981) with the estimated costs of the currently approved estimate ($11.4 billion, November, 1983), a difference of $3.9 billion of 35 per cent," the report said.

The final cost estimate is ever-changing, ever- evolving, and the last current estimate is $10.9 billion, but, says Hydro, that will change too, depending on the future costs of contruction, interest rates and inflation.

Of the $10.9 billion, $3 billion has already been committed to contractors and suppliers and $1.7 billion has actually been spent. About $4 billion of the $10.9 billion will go toward interest payments-- the cost of borrowing to pay for the construction of Darlington.

3,000 Workers

More than 3,000 workers are putting Darlington together on 485 hectares (1,200 acres) of land on the shores of Lake Ontario, five kilmetres southwest of Bomanville. Ten hectares (26 acres) of land were reclaimed from the lake for the project.

More than 340,000 cubic metres of concrete have been poured, equivalent to nine CN Towers, with 11 more to go. The "vacuum" building, to be used to absorb the release of energy in case of an accident, took nine consecutive days of concrete pouring to build.

The first of the four nuclear reacotrs recently arrived from Montreal by barge. It weighs 650 tons.

Each reactor will contain 480 "callandria" tubes, each containing 6,240 bunndles of uranium fuel encased in zircaloy sheathing. The tubes are placed in steel tanks which contain water and steel balls for shielding purposes.

The station will require 153,000 litres (33,655 gallons) of lake water per second for cooling purposes and a subway-size, 925-metre long tunnel has been built under the lake to get it.

Reid and other committee members were suitable impressed during their tour. "Mammoth is the word," said Conservative MPP Doug Kennedy. But the escalating costs are "somewhat bewildering, to tell you the truth."

But Kennedy and the other government MPPs support the concept of nuclear power and Darlington. "It's a gutsy decision" to continue with it, he said.

Not that Ontario Hydro didn't have second thoughts. Its board of directors considered scrapping the project in the early days but by 1981 made the decision to forge ahead.

What made them think again was an announcement from the Ontario government in the form of a new Board of Industrial Leadership and Development (BILD), which formed the basis for the March, 1981, election campaign. BILD committee the government

to an explansion of nuclear power and a reduction "in our dependency on imported oil."

Hydro officials steadfastly defended that position, both during the committee tour and at Queen's Park last week when the committee discussed the auditor's report. New Hydro chairman Tom Campbell and president Milan Nastich said cancelling Darlington would be a mistake.

The New Democratic Party members of the committee, Bud Wildman and Ed Philip, disagree. They don't believe the "cost-benefit" figures about Hydro and are demanding a full public inquiry "into Hydro's program for meeting the needs of the province's electricity consumers in the 1990s."

One contractor who has done a job for Hydro at Darlington would like to see an inquiry as well. The contractor, who asked that his name not be used, said Hydro's approach to building Darlington has been "a disaster."

His firm had difficulty getting decisions from Hydro because of the "incredible bureaucracy ...you had to go through 20 engineers to get an answer or approval for things."

The contractor said he would never again bid on a Hydro contract and other contractors feel the same. He said he will probably lose money on the Darlington job because of the delays in construction.

Hydro "should be held accountable" for the escalation in costs, he said. His firm had to make their bid and stick to it, but Hydro seems to have unlimited funds to change estimates. "It's like playing poker with millionaires, having only $100 in your (own) pocket."

Mismanagement Blamed

It's not interest rates or inflation that have sent the costs of Darlington skyrocketing, he said, but simply Hydro's mismanagement. "This was the worst job in the history of the company."

Reid, though, said he's never heard any compaints from contractors who have worked on a Hydro project at Nanticoke, in his riding.

The Darlington contractor, he said, may be anxious to bomplete a job but it was evident from the committee's tour that Hydro is "erring on the side of caution." It is making doubly sure Darlington is built safely bacause nuclear plants in the U.S. have discovered costly faults after being built.

During the tour, different Hydro officials met the committee as they proceeded through the work areas. Each one repeated the line that everything being done to ensure that the job "is done right the FIRST time." And that means higher costs.

Reid will quit as MPP for the northern Ontario riding of Rainy River at the end of October after serving in the Legislature for 17 years. He has always been irreverent, and caustic in his appraisal of the workings of government.

As he stepped of the bus at Darlington, he looked around and said "you don't get much for $10.9 billion any more." But after walking through the project, he said "it's bloody impressive."

And he's impressed with the earnestness of Hydro officials when they appear before his committee (its examination is continuing this week). The civil servants at Queen's Park tell him how each Hydro official rehearses what they have to say in front of the committee.

"They've gone over (Darlington) from one end to another. Probably by doing so they can correct things in case we (should happen to) find out about it," Reid said.

In past years Hydro officials and other senior bureaucrats have been able to get away with "bafflegab" before the committee. One former deputy commissioner used to say "you don't have to get up very early in the morning" to fool the committee.

But things have changed, and Hydro officials bend over backward to explain policy, sometimes with great patience as they listen to the occasional asinine question from a committee member.

Reid said it is just impossible for the public accounts committee to handle Ontario Hydro. Spending two weeks discussing an auditor's report just isn't good enough.

The solution, reid said, is for the government to create a standing (full-time) committee to deal solely with all agencies, boards and commissions, which would include Ontario Hydro. There are about 285 of them in Ontario.

The only way to handle the beast is to wear him down over a long period of time.

CSO: 5120/6

GOVERNORS' PUBLIC APPEAL FOR NUCLEAR SAFEGUARDS CRITICIZED

Bahia Blanca LA NUEVA PROVINCIA in Spanish 21 Oct 84 p 6

[Editorial: "Nuclear Energy: Astonishing Originality"]

[Text] A petition signed by the governors of Rio Negro and Neuquen, Bishop De Nevares and Bishop Hesayne, some "human rights" advocates, certain technicians, various deputies and even national senator Antonio Napoli, president of the UCR [Radical Civic Union] bloc in the Senate, is certainly original in the political and ideological panorama of the country. For the first time, a group of celebrities from different sectors speak out publicly against the policy of national independence in the nuclear sector. All governments without exception have maintained this independence since the creation of the National Commission for Atomic Energy.

Maybe this is related to the obsessive and unwise recommendations of former U.S. president Jimmy Carter during his recent visit. However, it would be only too easy to consider it a mere echo of the policy he represents. In some sense, it unquestionably is. It is not enough, though, to point out this suggestive chronological and propaganda coincidence without looking at some features of the text as well as the possible motives of the signers who will remain in the collective memory for a long time.

Perhaps the most outstanding part of the text in question is its ideological nature. It implies two levels. One, the formal and obvious, expresses a plausible generality. The other, substantial and underlying, hides an exact policy contrary to the country's. The contrast between the two leads to its "falseness" or ideological trap. On one side (first level), they say to us that the nuclear question "is the most terrible threat for the survival of mankind." This is unquestionably true. However (the other side of the coin), that horrified statement is not made about U.S. or Soviet nuclear military installations or other members of the "atomic club" but, much more modestly, about the Argentine installations at Rio Negro and Neuquen. These certainly do not put mankind on the verge of destruction.

It could be considered an eventual renunciation of nuclear development--and the dangerous side of it--if the dominant powers in the world, the only ones who endanger the world, did so. However, they don't. It is very unlikely that they will despite the speeches of Governor Sapag and the sermons of

Monsignor De Nevares, sermons that--we assume--are not heard clearly in Washington or Moscow. Consequently, the antinuclear preachers seem to believe that they really contribute to universal peace when they worry about the installations at Rio Negro and Neuquen. The mere statement of this idea is shocking nonsense.

Where the petition clearly expresses its true context is in the paragraph that advocates "international verification" of nuclear installations. This is claimed as "a unique change" that does not constitute "any sacrifice of national interests but a more just evaluation of those interests." This, in clear language, means that the multinational or supranational controls, set up precisely by the same powers that have achieved superior atomic development with the declared objective of keeping other nations from progressing in that sector and thus maintaining their technological oligopoly, must be welcomed. The "more just evaluation" of national interests would not be an evaluation by Argentina but by those other powers.

This is how seemingly good mottoes like "peace" or "love of mankind" cover up, under their sweet talk, propaganda tactics that obey the conflicts of the powers in the world. In this concrete case, it is obviously a matter of curtailing the national power of decision to benefit a center of multinational decision. The good nature of Dr Jekyll is shown with a perverse Mr. Hyde. The motives are perhaps even more varied. The positions of Bishop De Nevares and Bishop Hesayne, chronic usufructuaries of religion for political ends, are part of a long militancy and cannot surprise anyone. More serious perhaps is the position of the governors. This might be a symptom of the often cited crisis of the country, one of whose features is that the regional powers operate in accord with the interests of the superpowers, "ignoring" the nation. Finally, always such signers include some naive utopian, afflicted with "angelicness" which--as Pascal taught--is the worst disease. "When one wants to become an angel, he becomes a beast."

7717
CSO: 5100/2028

CNEA OFFICIAL SEES NO ADVANTAGES TO SIGNING NPT

Buenos Aires CLARIN in Spanish 30 Oct 84 pp 16-17

[Article by Carlos Araoz, doctor in chemistry, specialist in nuclear technology and member of the Nuclear Policy Advisory Council of the National Commission for Atomic Energy: "Development and Nuclear Policy"]

[Excerpt] TNP and Development

Referring to the advantages of signing the TNP [Nuclear Nonproliferation Treaty] as the only road to nuclear development, the facts I note indicate the opposite.

In 1968, Argentina started to purchase the first nuclear powerplant. The competition among various suppliers ended with adjudication to Germany. Appropriate internal planning and a contract that included the development of local industry among its objectives, added to a broad technical cooperation agreement, gave impetus to programs of commercial nuclear electrical generation with broad local participation, all within an adequate framework of international safeguards. The same is true about the second nuclear powerplant now in operation and the relationship and technical exchange with Canada. The third nuclear powerplant, CNA-II, continued the line begun in 1969 permitting a high percentage of local participation through technological transfer in engineering, project direction, quality control, etc. The transfer of technology from abroad and the developments themselves have made it possible to achieve good operational capacity.

I do not know of any developing countries that, as a result of signing the TNP, have achieved impetus in the implementation of their technological capacity for nuclear electrical generation or that have had access--in spite of their need for peaceful uses--to areas considered "sensitive" like uranium enrichment and heavy water.

During the execution of the nuclear powerplant projects mentioned above, there were pressures to modify the agreements on safeguards as well as to sign the TNP, unquestionably from the superpowers. Through a firm, clear and explicit policy, Argentina managed to avoid problems. Nuclear development continued on its announced and practiced bases of peaceful applications. It can be cited today as an example in the country of continuity and self-determination.

We must emphasize that the same line has continued in the nuclear sector for 30 years, aimed at offering the country an independent source of energy. Many publications have mentioned this continuity as one of the keys to the success achieved. It is praiseworthy that the plans have not varied in spite of the political and governing kaleidoscope we have had. How can the objectives of the nuclear plan be treated as a decision of the government of the Process or as an aggressive position like on the Falklands?

Nuclear War or Peace

Referring to the possibility of a nuclear war, the article commented on here ["Foreign Nuclear Policy" by Carlos Florit] mentioned "the development of a model of behavior of optimal global rationality" as a way to prevent universal suicide which this war would mean. It could be inferred from reading it that the irrationals would be the small countries like Argentina that do not sign discriminatory treaties while the rationals would be the large nuclear powers.

From my point of view, reality contradicts this assumption. The world is one step from destruction today not because of the small countries with nuclear development but the superpowers with their thousands of nuclear missiles ready to be fired. An example is the fruitless demands of a Europe threatened by annihilation.

The recent statements by former U.S. president James Carter about signing the TNP (CLARIN, 11 Oct) unfortunately do not reveal concern about nuclear disarmament, the only solution to the current situation when hope for mankind has become despair. On the contrary, commercial problems associated with the treaty are emphasized by warning that if Argentina does not sign it, "it will have problems when it is ready to market its nuclear products. The main producers cannot cooperate with that country since their laws prohibit cooperation with countries that do not abide by the international safeguards." Carter failed to mention that all the international transfers done by Argentina in its foreign contracts are under IAEA safeguards.

Argentina must continue its policy of peaceful uses of nuclear energy, always remembering that the problem of a nuclear war has been created by the large powers but the problems of development belong to the poor countries. Domination of future markets and handling the sources of energy belong to both extremes. Treaties like the TNP remain part of a complex tangle of interests and supremacies. Unfortunately, it has failed in essence by not stopping the nuclear arms race.

7717
CSO: 5100/2028

CONSTANTINI SAYS NUCLEAR PROJECTS WILL NOT BE HALTED

PY282147 Buenos Aires TELAM in Spanish 1857 GMT 28 Nov 84

[Excerpt] Mendoza, 28 Nov (TELAM) -- Alberto Constantini, the head of the National Atomic Energy Commission (CNEA), today affirmed that President Alfonsin does not intend to stop nuclear activities in the country and that he has promised to study the CNEA working program. Replying to a question from TELAM, Constantini asserted that a decision to stop the nuclear program would imply discontinuing all nuclear activities in the country, adding that President Alfonsin's intention is not to stop the program.

However, in comments he made at a downtown hotel before attending a meeting with Santiago Province Governor Felipe Llaver, Constantini admitted that the situation is critical: Either the work plan is reviewed or all projects will have to stop. The uncertainty cannot continue much longer over whether we are going to supply a new push to the projects or rescind contracts. Constantini reasserted that he has reported this situation to the president, who approved the budget requested by the CNEA and affirmed that not a single CNEA project will be stopped, because this would be tantamount to approving a policy of stopping the nuclear program, something that has never entered the president's mind. The CNEA head also said that in a period of democracy, the country cannot let the CNEA accomplishments fall behind, but it must move ahead because nuclear technology can be a basis for its development.

CSO: 5100/2036

CNEA TECHNICIANS' RESIGNATION SAID 'IMMINENT'

PY161507 Buenos Aires NOTICIAS ARGENTINAS in Spanish 2125 GMT 15 Nov 84

[Excerpt] Buenos Aires, 15 Nov (NA)--Jorge Bertoni, the director of the Department of Nuclear Plants, today warned that the scientists and technicians of the National Atomic Energy Commission (CNEA) will resign "imminently" unless "we succeed in giving the nuclear plan some kind of continuity, at whatever rate, which may allow us to keep our valuable human resources." He also revealed that there is a 3-year delay in the Atucha II project. Bertoni also said that the Atucha I plant, which will complete its 10th year of operation on 16 November, "has proven to be reliable, safe, and economical." Hans Frewer, an executive board member of the Kraftwerk Union (KWU) company which built Atucha I, has said in a letter addressed to CNEA President Alberto Constantini that the Atucha I plant "has been among the world's best nuclear power plants since 1974 because of its performance." Bertoni told NOTICIAS ARGENTINAS that budget cuts have delayed the operation of Atucha II "from 1987 to the beginning of 1990," according to the test estimates. He stressed that "the delay can be even longer if the necessary financial resources are not provided." Bertoni admitted that "Argentina's power plants have surplus capacity" because of the economic recession which affects its productive apparatus. He voiced his hope that "this economic situation will soon be overcome" and that "the considerable experience acquired by the CNEA" will be applied in the future, "at least before the year 2000 to the construction of new nuclear plants."

In his letter, Frewer recalled that the construction of Atucha I was the first order placed by a foreign country with FRG industry, and that the contract "attested to the confidence of the CNEA." "This confidence is the result of the traditionally close economic cooperation between the FRG and Argentina, especially as it concerns Siemens A.G. (KWU's sole stockholder), a firm that has been linked with Argentina for more than 80 years in several areas and also in the field of electric power plants," Frewer added.

In this regard, the letter pointed out that "the technical and economic success of Atucha I has been one of the main factors that allowed the initiation of a long-term and broad cooperation program with FRG industry in 1979 for the implementation of the nuclear program." The letter stressed that "thanks to FRG cooperation in the planning and construction of nuclear plants and in the production of components for such plants, Argentina is utilizing the technical background that it previously acquired." "Thus," the letter added, "nuclear energy has become a practical alternative in Argentina because of a consistent and farsighted policy of peaceful use of nuclear energy."

Atucha I, the first nuclear plant, has reached an average 82.7 percent output performance, which places it among the best plants in the world. For several years it has covered between 8 and 10 percent of Argentina's domestic needs. It has thus far generated 22.7 billion kHz. Since 1974, Atucha I has consumed only 600 tons of naturally occurring uranium. This has allowed Argentina to save some 6 million tons of oil.

CSO: 5100/2029

CNEA OFFICIAL REPORTS ON CONTAMINATION TESTS

PY092215 Buenos Aires DYN in Spanish 1405 GMT 9 Nov 84

[Text] Buenos Aires, 9 Nov (DYN)--The tests carried out by the National Commission for Atomic Energy (CNEA) technicians in the Pilcaniyeu, Rio Negro, area to see whether there has been environmental contamination resulting from the explosion that took place a few days ago at the enriched uranium processing plant that is located in that area have yielded negative results. This was reported today by CNEA Director Alberto Costantini, who explained that the explosion in question was not an atomic explosion but a chemical one and that as a result of it a technician was seriously injured, but that at present he is out of danger.

According to Costantini, the accident took place on 29 October when Silvo Bonazzi, a technician and an Applied Research Institute [INVAP] official "was walking through the installations carrying fluorinated uranium from the plant to the laboratory." Constantini added that "the reasons for the explosion are still under investigation, but everything seems to show that an oil mix passed through the neck of the flask and mixed with gaseous uranium. This caused a chemical reaction that resulted in a notable increase of pressure that the flask was unable to bear." Costantini added that "unfortunately this explosion caused serious injuries to the technician who had to have one of his legs amputated while the other was reattached. At present, he is out of danger."

The CNEA official said that "several doctors from Buenos Aires have come to control possible toxic effects that the smoke could have caused in the area but so far no signs of contamination have been found, not even in the victim of the accident or the three other persons who were present at the plant that day." Constantini noted that the "medical team from Bariloche and the one from Buenos Aires have acted with great haste and in a very professional manner." He added that "this is the first accident that has taken place since we assumed our duties at the CEMA since, as is well-known, the other accident at the Constituyentes plant in Buenos Aires in mid-1983."

The installations that INVAP has in Pilcaniyeu, where it is carrying out tasks for the CNEA, obtained publicity about 1 year ago when it was disclosed that a process had been discovered for the enriching of uranium through gaseous diffusion.

CSO: 5100/2032

CNEA CHAIRMAN SCORES WAGE POLICY, BACKS EMBALSE STRIKERS

Buenos Aires CLARIN in Spanish 9 Nov 84 p 4

[Text] The head of the National Commission for Atomic Energy (CNEA), Alberto Costantini, has expressed his dissatisfaction with the wage and budget policy imposed upon the agency, and stated that he trusts that President Raul Alfonsin will address that problem; but he announced that, otherwise, he would voice his disagreement and proceed "accordingly," without explaining whether he meant by this a possible resignation from his position.

The CNEA chairman noted that the concerns of that agency regarding nuclear development are "very deep and serious," and that there is a need "to preserve what has been achieved in Argentina in the field of nuclear technology."

In statements made to a Cordoba morning paper, he remarked that if there is a desire to protect what has been accomplished in this area, "we cannot afford to lose an enormous number of highly qualified individuals who have been trained over a period of many years, to lose technology, to give up our laboratories or to leave destruction as a result of the standstill in our projects."

Costantini, who visited the Embalse-Rio Tercero plant which comes under CNEA, also commented on the 3-hour work stoppages per shift started yesterday by the personnel from that establishment, demanding higher wages.

In this connection, he admitted that the workers' demands are based on "valid reasons," although he pointed out that this is not the most suitable time for adopting forceful measures.

He added that it would have been "more responsible" to wait until the completion of the repairs to the Embalse plant, "with which we would have provided security in the maintenance of the powerplant's elements, which cost billions of dollars."

The work stoppages will be carried out until next Thursday and, if the sector's demands are not met by the authorities, they will be extended to 4 hours per shift.

The workers requested an immediate wage revision and the effectiveness of the collective contract signed in 1975, while declaring themselves in favor the maintaining the Argentine nuclear development plan.

Moreover, he claimed: "There is a series of reasons which make it necessary for the commission not to be provided with a percentage for the study of its budget, but rather with an exhaustive analysis of its requirements."

"The wage policy commission must not treat the scientists as if they were mailmen. I am not saying this pejoratively, but I think that we should give everyone his due," he stressed.

He added: "I hope that, at my meeting with President Alfonsin next Wednesday, these problems will be solved."

He claimed: "Otherwise, accepting and respecting the president's position, I shall take the liberty of disagreeing with the solutions that are adopted and I shall proceed accordingly." However, he did not explain what decision he would make in that contingency.

On the other hand, he announced that 21 cobalt bars would be removed from the Embalse-Rio Tercero reactor, and "will be sold to Canada"; and he stated that, as compensation, it would receive cobalt "ready-made sources" for use in medical therapy, and spare parts for nuclear powerplants.

2909
CSO: 5100/2030

BRIEFS

ALGERIAN ENERGY DELEGATION VISIT--Buenos Aires, 19 Nov (TELAM)--A delegation of officials of the Algerian New Energies Commission today arrived in Argentina. The delegation will stay in the country until 24 November to continue with the already initiated contacts to establish a basis for cooperation in the areas of nuclear, wind and solar energy. Abdelkaoui Ramtani, director of foreign relations, and El Hacene Hellal, head of the Scientific and Industrial Activities Directorate, are members of the Algerian delegation. During their stay in Argentina, the Algerian officials will meet with officials of the National Atomic Energy Commission [CNEA]; Jorge Federico Sabato, foreign affairs secretary of state for special affairs; and with representatives of the Argentine Nuclear Technology Association. Their program includes visits to the CNEA headquarters, where they will be briefed on the scope of Argentine nuclear plans, the Constituyentes Atomic Center, the Ezeiza Atomic Center, and the Atucha I and II nuclear plants, and to the heavy water pilot plant (which is under construction). [Text] [Buenos Aires TELAM in Spanish 1851 GMT 19 Nov 84]

FIRST COBALT BAR--Buenos Aires, 13 Nov (TELAM)--Personnel of the Embalse Nuclear Plant in Cordoba Province today extracted the first cobalt bar produced in the country. The National Atomic Energy Commission tonight reported that the large-scale production of this radioactive mineral applicable in medicine and industries is thus dedicated in Latin America. According to predictions at the Cordoba nuclear plant, annual production of cobalt -60 will amount to approximately 3 million curies, which will turn Argentina into one of the main manufacturers of radioisotopes in the world. This production will cover domestic consumption and exports and bring currency to the country. [Text] [Buenos Aires TELAM in Spanish 0102 GMT 14 Nov 84]

NUCLEAR ENERGY GROWTH--The minister of public works and services, engineer Roque Carranza, stated that the government is going to continue with the nuclear electrical plan. This sector will show the greatest percentage growth of all the energy-producing sectors of the country. He said that this means incorporating about 50 percent more energy from a renewable source to the National Interconnected System. This dispenses with fossil fuels. Engineer Carranza explained that, during the first 9 months of this year, consumption of energy grew about 5 percent while the PBI [Gross Domestic Product] did not grow equally. This denotes a relative waste of energy. [Text] [Buenos Aires LA NACION in Spanish 4 Nov 84 sec 3 p 6] 7717

ATUCHA EMPLOYEES ISSUE DEMANDS--The employees of the Atucha nuclear powerplant in Zarate began strikes yesterday lasting 3 hours per shift. This is a protest about the lack of solution to their "repeated demands for wage changes and union acceptance," according to their communique. The strikes will be repeated today and will be expanded to 4 hours tomorrow. They will end Friday with a 24-hour strike. The union communique stated that the wages in the sector "have suffered a drastic drop that places them 44 percent below the inflationary rate plus the increase in the real wage promised by the PEN [National Executive Body] for the current year." The workers strike without affecting the essential personnel to "keep the nuclear powerplant generating energy under safe conditions." Also the communique indicated that the employees of the nuclear powerplants "do not have an agreement that permits them to discuss their wages. They are forced to accept the increases decreed by the PEN for special public administration." [Excerpt] [Buenos Aires CLARIN in Spanish 30 Oct 84 p 10] 7717

CSO: 5100/2028

URANIUM ENRICHMENT PROGRAM TO BEGIN FEB 1985

PY072345 Sao Paulo O ESTADO DE SAO PAULO in Portuguese 6 Nov 84 p 34

[Text] Brasilia -- The Brazilian Nuclear Corporation [Nuclebras] President Dario Gomez stated yesterday that the uranium enrichment process through the jet nozzle system, provided for in the Brazilian-FRG nuclear agreement, has been confirmed and the Resende [Rio de Janeiro] pilot plan will begin operating in February 1985, enriching uranium to 1 percent. This unit by the end of 1985 will have cost 700 million Deutsche Marks (nearly 609 billion cruzeiros) and Nuclebras' next objective will be the conclusion of the plant for production at the commercial level [usina de demonstracao comercial] by 1988 or 1989.

Dario Gomes stated that nuclear plants are the best solution for the supply of energy in the central-southern part of the country, because the hydroelectrical plants that are being built by the Sao Paulo Electric Powerplants, Inc (Tres Irmaso, Porto Primavera, Rosana, and Taquarucu) have an installed capacity of 3,260 megawatts but an energy supply capacity of only 2,282 megawatts, in case its load factor reaches 70 percent, and a nuclear plant such as that of Angra II, which can be concluded in 3 years, offers 1,000 megawatts. Gomes added that Eletrobras [Brazilian Electric Power Companies, Inc.] must conduct a study, without emotions, on programming the power plants after 1989, because it would be appropriate to conclude the construction of Angra II, even at a cost higher than $1,800 per installed kilowatts, instead of concluding, for example, a dam like Rosana which will also be ready in 3 years, but which adds only 100 megawatts of firm energy to the system.

The president of Nuclebras has stated that the enrichment of uranium in Brazil is no longer a technical problem but a financial problem. And he gave an example: The Pocos de Caldas uranium concentrates plant (in Minas Gerais) is operating with only one third of its nominal capacity of 500 tons per year of U.S. 308 [not further identified], and Nuclebras has received an order for supply of 370 tons per year from 1985 to 1989 from a California electric company, but so far it could not give any answer due to the lack of drawing capital. Dario Gomes said that the 1984 Nuclebras asked for 36 billion cruzeiros for the Pocos de Caldas plant's operation capital, but Seplan [the Planning Secretariat] only authorized 20 billion cruzeiros. In order to operate at full power in 1985, and to comply with the U.S. order, 60 billion cruzeiros will be necessary. The kilogram of uranium concentrate in costing $60 on the international market and the contract will produce a profit of $22.2 million per year.

The California enterprise is also interested in purchasing the same quantity of Brazilian uranium concentrate as of 1990. According to the Nuclebras president, this contract

could be taken up at that time by the Itatiaia project, located in Ceara State, which has a production capacity of up to 600 tons of uranium concentrate per year. Nuclebras is also studying a proposal to supply 150 tons per year of uranium concentrate to Turkey in a first 5-year period that would run from 1988 to 1993 and then for a 10-year period running from 1994 to 2003. The enterprise's objective, therefore, is not that of exporting uranium concentrate. Enriched uranium is the fuel element of the reactors and it costs at least 100 times more.

CSO: 5100/2025

NUCLEAR PROGRAM IN 'DECISIVE PERIOD'

PY201125 Sao Paulo O ESTADO DE SAO PAULO in Portuguese 18 Nov 84 p 43

[Article by Jose Roberto Arruda]

[Text] The nuclear program, which has already cost the country $4 billion, is today experiencing a decisive period: The lack of resources can mean the end of its main objective, that of absorbing mastering and reproducing technology. The main enterprise of the Nuclebras Group [Brazilian Nuclear Corporations Inc], the firm that deals with technology, is Nuclen [Nuclebras Engineering Inc] and it is practically broke. It cannot even get engineers, who have been trained in the FRG and who have cost the nation's coffers $400,000 each, to stay in its ranks.

According to Ronaldo Baricio, Nuclen's director superintendent, of 61 engineers, from a group of 158 that were trained in the FRG, who have complied with their 2-year obligatory contract with the firm, 31 have already left due to a lack of motivation, the breaking up of teams and low salaries. Nuclen had to send 23 of the remaining 30 engineers to work on KWU [Kraftwerk Union] projects in order not to lose them.

The enterprises that supply services and equipment to Nuclen, which owes them 150 billion cruzeiros, are sending letters to the latter informing the firm that by the end of the year they will abandon the nuclear program, thus contracts will be terminated with 43 German firms that supply technical advice for projects and that manufacture parts and components for the nuclear sector. According to Ronaldo Fabricio, the private enterprises that are participating in the nuclear program have already had problems due to the delays: Many of these firms have invested in the training of personnel, in the purchase of raw material and in commitments to pay royalties for patents and technical assistance to German firms, and now they have been forced to reprogram everything.

The Brazilian and German firms have not been able to change their nuclear program schedules without sacrifice. But, not even within the minimum period of time set by Nuclebras do the supplying firms get paid. Therefore, they do not pay the German firms, which in turn do not understand this type of procedure. According to Nuclen's director, by the time the Nuclebras report is submitted to the new president, the nuclear program situation may have already become irreversibly deteriorated.

In the report, Dario Gomez, Nuclebras president, states that despite the drawbacks during the 8 years that the nuclear program has been in existence, it has been worthwhile to continue with the construction of eight nuclear plants and the units that are needed for the fuel cycle. The future president will have to decide what to do with a program that will need $850 million per year, up to 1990, in order to continue on

a minimum schedule of just 2 nuclear plants and the units for the fuel cycle per year. As Germany does not intend to provide the technology of the fuel cycle without the four plants provided for in the diplomatic agreement, then the above mentioned figure will be much higher. Today, the Nuclebras Group, which includes a holding enterprise, six subsidary firms and one associated firm, has approximately 5,900 employees and a monthly salary role amounting to $3 million, in other words, 8.5 billion cruzeiros per month. Without resources of its own, Nuclebras depends entirely on foreign loans. For each $7 that is obtained from abroad, the Treasury puts up $1 and this, according to the experts of the firm's financial department, makes any cash flow program impossible.

In years gone by the relation was $1 for foreign loans in cash [moeda corrente], $1 for foreign loans for the purchase of goods and services, and $1 from the Treasury. In addition and in accordance with Central Bank Resolution 479-497, those dollars obtained from abroad were blocked for 150, 180 and 210 days, when they were released in quotas of 20, 40, and 40 percent respectively, thus obliging Nuclebras many times to begin to pay the interest, which is paid quarterly, on those loans without having put its hands on the capital.

In addition to paying very high interest rates abroad for loans, it cannot get the equivalent in cruzeiros within the appropriate time. Until October it had to pay 60 billion cruzeiros in interest rates, fines, and monetary corrections due to the delays. The state enterprise receives its money from the Treasury on a very delayed basis and it pays the Treasury interest, fines, and monetary corrections on the delayed payment of its contributions to pension and health funds, according to Finance Department experts.

Thus, as it was possible to implement an orderly financial program, Nuclebras this year "pulled rabbits out of the hat" so as not to delay the payment of its employees salaries. Everything said and done, contributions to pension and health funds and payments to suppliers and for fuels suffer and continue to suffer very long delays. With a reinforcement of funds from Seplan [Planning Secretariat], the enterprise was authorized to seek another $60 million abroad. Thus the firm's financial director will travel this weekend to Germany to formalize another loan with German banks. Even with this injection of resources, which will be released just before the end of the year, according to the Seplan promise, there will only be a small reduction in delayed payments to the suppliers: It will be reduced from the current 180 billion cruzeiros to 100 billion cruzeiros at the beginning of 1985, in other words, only 50 billion cruzeiros will be knocked off the total of delayed payments, which is not very much, according to Fabricio.

Nuclebras' debt today amounts to approximately $2 billion ($1.2 billion in cash and $748 million in credits for goods and services). This amount would have doubled by 2003, when it would have finally been paid off, if it was not constantly renegotiated. The service of this debt has demanded $290 million this year. In 1985 the servicing of this debt will fall to $285 million, to increase once again in 1986 to $367 million, in 1987 to $435 million, and to $443 million in 1988, the years in which the highest amortizations will be made and in which the debt will have higher additional charges. Since its creation, Nuclebras has received 786.5 billion cruzeiros in integrated capital and approximately $300 million in reserves from the Treasury.

Among the rabbits that Nuclebras and its subsidaries have pulled from the hat so as not to lose such suppliers as Natron, Promon, and Engefix and IESA [Isnard Engenharia], there is the yielding of the dollar credits that have been blocked with which it can contain delays in payment. Without resources of its own, this situation of financial dependency can last until 1990, when it will transfer the two nuclear plants to Furnas [Brazilian Electric Power Companies subsidiary] and it will be paid for the investment that it has made.

CSO: 5100/2034

FUTURE ENRICHMENT PLANT CONSTRUCTION IN CEARA ANNOUNCED

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 20 Oct 84 p 24

[Text] Fortaleza--Yesterday in Fortaleza Mines and Energy Minister Cesar Cals announced the construction of a uranium enrichment plant in Ceara aimed at taking advantage of the large quantity of uranium found in Itataia, 210 km from the capital and considered the largest uranium reserve in the country and the fifth largest in the world. This announcement was made during a ceremony held for the purpose of signing an accord between NUCLEBRAS [Brazilian Nuclear Corporations, Inc] and PROFERTIL [expansion unknown], presided over by Gov Gonzaga Mota at Abolicao Palace. During the meeting it was decided to conduct a study on the technical, economic and financial feasibility of capitalizing on the 142,500 tons of uranium oxide available.

Gonzaga Mota said that the Itataia deposit is one of the richest phosphate-associated uranium-ore deposits in the world: whereas other deposits are exploited commercially with an average uranium content of 150 to 250 ppm (parts per million), in Itataia the average content is 1,800 ppm, which makes its exploitation highly promising. Cesar Cals did not predict when that enrichment plant would be put into operation but classified it as "a fully realizable dream." He also said that in the 1990's the country which has an effective exploitation and domination of uranium enrichment technology "will have more strength in the world than the present-day oil producers."

According to the minister of mines and energy, the feasibility study will be made with the aid of a pilot unit set up in Itataia for the physical processing of the ore and another in Ibituba in Santa Caterina for its chemical processing. The estimated cost of this first phase of studies and pilot operation is $12.5 million. Cesar Cals said that NUCLEBRAS has already invested $20 million in the Itataia area in the form of geological studies, mineral research, projects related to infrastructure, technical characteristics and laboratory work.

8568
CSO: 5100/2021

EDITORIAL QUESTIONS STATUS OF SEVERAL IPEN PROGRAMS

Sao Paulo FOLHA DE SAO PAULO in Portuguese 14 Oct 84 p 2

[Editorial: "Nuclear Beginning"; date and place not given]

[Text] President Figueiredo's visit to the Institute for Energy and Nuclear Research (IPEN) and his apparent satisfaction with some of the results of nuclear technology relevant to medical applications served to divert attention from some of the tasks which were assumed in the recent past by that institution and whose objectives are still being questioned, to say the least.

For example, what is the status of the plutonium chemical projects whose only possible objective, within the limits of the Brazilian technological option, is related to the production of nuclear weapons? Shall we continue the highly successful program involving the production of tetrachloride of uranium, a technological segment which is essential to any alternative based on heavy uranium as a fuel? And what is the status of the preliminary studies on the disposal of nuclear rejects, the so-called atomic waste? There are pertinent questions, principally now when the United States has rejected any socially justifiable technical alternative, as unequivocally shown by the recent pact calling for the use of Namibian territory for the permanent deposit of American nuclear waste at a cost of $800 million per year.

Should Brazil resort to the same procedure? Shall we be considering other underdeveloped countries potentially feasible for receiving our atomic waste inasmuch as those technologies, extolled until recently as plausible solutions, were definitely abandoned by advanced countries?

It is quite possible that those problems are being transferred to other institutions as a result of IPEN's return to the jurisidction of the state of San Paulo after its short period under federal control. It would then be opportune to receive an official report on the new responsibilities of that traditional research center in Sao Paulo State.

8568
CSO: 5100/2021

BRIEFS

URANIUM ENRICHMENT TESTS--Mines and Energy Minister Cesar Cals today observed the start of the operational tests of the Nuclebras uranium enrichment plant in Rezende, Rio de Janeiro. According to Nuclebras President Dario Gomes, the objective of the plant is to enrich uranium to a concentration of approximately 3.2 percent. He explained that this concentration must be attained to allow the operation of the Brazilian nuclear plants that will produce electrical power. [Text] [Brasilia Domestic Service in Portuguese 2200 GMT 27 Nov 84 PY]

CSO: 5100/2037

NUCLEAR TECHNICIANS FIRED FOR SALARY DEMANDS

Lima EL DIARIO DE MARKA in Spanish 21 Oct 84 p 4

> [Text] Incredible, inconceivable. The director of the Peruvian Institute of Nuclear Energy [IPEN], Peruvian Army Brig Gen (Ret) Juan Barreda Delgado, has fired five Peruvian scientists since last Friday for the "crime" of protesting publicly in demand of better salaries and a new organic law for the IPEN.

Fired are: Modesto Montoya, with a doctorate from Paris, who has worked with the French Atomic Energy Commission and was a professor at the National University of Engineering; Juan Arellano Vicuna, an engineer who is a specialist on radiotracers in the industry and on nuclear instrumentation; Carmen Poma Rojas, a chemical technician and specialist on analysis by neotronic activation; Agustin Urcia Medina, an electronics technician and nuclear electronics specialist; and Esther Cardenas, secretary of the Raw Materials Directorate.

All of them belong to the technical branch, which means that their dismissal directly affects the institution. "No one can understand how these scientists can be fired when the country has just started to take its first steps towards nuclear energy, above all when the research being done directly benefits the industry, medicine, oil industry, health and agriculture," it was explained.

Peru is behind in this field in comparison with Latin American countries. The actions of revenge taken by a retired general--who furthermore does not know the field either as a scientist or as an engineer, and worse yet is not well-informed in the nuclear field--can only be understood as an act of personal revenge. His action does serious harm to the country's objectives concerning the utilization of nuclear science. Not only the persons fired, but also Peru is harmed by this action. More than 50 specialists have left the IPEN thus far.

The case is more serious when it is taken into account that the salaries of IPEN personnel are entirely insufficient. A professional with a doctorate in nuclear engineering has been earning an average monthly salary of 700,000 to 750,000 soles since 3 years ago.

The IPEN director a few days ago declared in the Foreign Ministry on the occasion of the visit of Dr Hans Blix, director of the International Atomic Energy Agency, that "the brain drain must be prevented at all costs."

If we were to compare the facts with the director's fancy words, the truth is that there is a big difference.

The IPEN building currently is guarded internally during working hours by members of the Republican Guard, posted every 5 meters and armed with submachine guns and rifles.

The authorities also have ordered the closing of the only dining hall for the workers. They likewise have prevented meetings of the personnel who are intimidated by the presence of police.

In the face of these inconceivable abuses, the workers, having met in general assembly at a park nearby, agreed to call a preventive 24-hour strike for Thursday, 25 October.

Among other things, they are demanding immediate reinstatement of the five professionals, wage increases to improve their poverty-level economic situation, and resignation of the director for his clearly arrogant attitude and for ignoring the institute's functions.

Lastly, they said "no one can understand how an institute of so much scientific importance has been headed for 11 years by a person without knowledge of the field. We scientists require peace to do research and specifically not police and generals."

9925
CSO: 5100/2022

BRIEFS

URANIUM DEPOSIT DISCOVERED--The president of Ingemet and chairman of the Nuclear Energy Commission, engineer Mario Samame Boggio, announced the discovery of a large uranium deposit in Macusani (Puno), at an altitude of 4,000 meters; a deposit the abundance of which puts Peru "on the threshold of becoming a world power in uranium." Samame Boggio noted that this discovery, which has been duly proven on the scientific level, assures Peru "a hopeful future in the nuclear field; because if we exploit the coal as well, both elements could replace oil by a large percentage by the 1990's." [Excerpt] [Lima EL COMERCIO in Spanish 23 Nov 84 p A-8] 2909

CSO: 5100/2031

BRIEFS

TALCHER HEAVY WATER UNIT--November 7 (PTI)--During trial runs the heavy water plant here produced 105 kg of heavy water for the first time on October 24, an official announcement said today. The announcement said the plant was put on trial run after making the required modifications recommended by a high power committee of the Bhabha Atomic Research Centre following an on the spot inspection. Designed to produce 62 tonnes of heavy water annually, this plant of the Department of Atomic Energy has adopted modern technology from West Germany in the production process which is claimed to be the first of its kind. The plant receives synthesis gas as its raw material from the coal-based fertilizer plant of the Fertilizer Corporation of India here. The plant could not go into production for the past several years due to some design defects, according to a press release issued by it today. [Text] [Bombay THE TIMES OF INDIA in English 8 Nov 84 p 7]

NUCLEAR PLANT LEAK--Jaipur (PTI)--A high level inquiry has been ordered into the leakage of hydrogen sulphide gas in a heavy water plant at Rawatbhata near Kota, which resulted in the death of an engineer. [Text] [Calcutta THE TELEGRAPH in English 29 Oct 84 p 1]

CSO: 5150/0007

U. S. ALLEGEDLY AIDING DEVELOPMENT OF PAKISTAN NUCLEAR PROGRAM

Moscow MOSKOVSKAYA PRAVDA in Russian 13 Oct 84 p 4

[Article by R. Galiullin, under the rubric "International Notes": "Pakistan and the Bomb"]

[Text] With the arrest and conviction of Pakistani citizen Nazir Akhmad Vaida by a federal court in the state of Texas on 20 September, the number of persons implicated in nuclear espionage on behalf of Pakistan and now finding themselves behind bars reached four. Another who is added to them is Abdul Kadyr Khan, a Pakistani citizen who escaped arrest but was convicted by a Dutch court in absentia.

The Western, above all the American press, in lively comment on the hearings in the case of the "Pakistani Five," offered them as evidence that the West is supposedly taking vigorous steps to prevent the building of an "Islamic bomb." And while calling Abdul Kadyr Khan sometimes the "Pakistani Oppenheimer" in honor of the "father" of the American atomic bomb, and sometimes the "evil genius" of the Islamabad nuclear program "Project 706," the Washington press with a push from the White House invariably emphasized that he is also a "top atomic espionage agent" and that his field of activity was not America at all, but Western Europe, and they should, it was said, be responsible. As for Nazir Akhmad Vaida, Abdul Azais Khan, Salam Almeniani, and Mokhammed Akhmad, supposedly their very first attempts to secretly buy component equipment for Pakistani nuclear centers and take it out of the United States and Canada were firmly stopped.

Dean Hinton, U. S. Ambassador in Pakistan, is doing his bit to create the imagine of America as guarantor of nuclear secrets and advocate of nonproliferation of nuclear weapons in Asia. He makes one statement after another, the essential point of which is as follows: the United States will assist Islamabad in carrying out its nuclear program only if that country signs the Treaty on Nonproliferation of Nuclear Weapons and gives the International Atomic Energy Commission guarantees that its program pursues purely peaceful purposes. Speaking in May of this year at a reception in Karachi put on by the federation of chambers of commerce and industry, the Ambassador states that "the refusal of Islamabad to sign the treaty is one of the areas which contains potential for truly serious disagreement between Pakistan and the United States."

In fact Islamabad categorically refuses to put its signature on this document which 120 countries of the world have supported and officially adopted, and it is evading conducting a responsible dialogue with the International Atomic Energy Commission. But American assistance to Pakistan -- economic, financial, and above all military -- is increasing and certainly does not look like "serious disagreements" between Islamabad and Washington. People in Asia, therefore, do not pay as much attention to the clever statements of Dean Hinton, who is trying to present Washington as a kind of "knight without fear and reproach" as they do to the testimony of those people who, at least now, do not consider it necessary to conceal the truth.

Thus, Ronald Spiers, former U. S. Ambassador in Pakistan, upon completion of his diplomatic mission in August 1982 stated directly that U. S. military assistance to Pakistan is continuing despite the fact that Islamabad is carrying on vigorous development of nuclear weapons. According to his words, Pakistan today produces a large quantity of plutonium, one of the basic components of the atomic bomb. In his interview given to the Pakistani newspaper NAVA-E-VAKT, the ex-ambassador in fact disavowed the statement of two administrations (the White House and Islamabad) at once, to the effect that the Pakistani nuclear research program is pursuing only peaceful purposes.

This summer Alan Cranston, deputy leader of the Democratic Party in the U. S. Congress, prepared and published a 16-page report which made it clear that the Pakistani nuclear program is one more illustration of American lack of principle. "Several aspects of the Pakistani nuclear program," this document stated, "have nothing to do with peaceful use of nuclear energy." To the great dissatisfaction of the White House, the American senator also made public something that both Washington and Islamabad had kept secret: that a group of specialists in the little town of Vakh near Islamabad is continuing to work on designing a nuclear weapon; they are called the "group from Vakh."

In fact, the ambitious plans of the Islamabad generals are not embodied by Abdul Kadyr Khan, who is being presented as the leader of the nuclear program, nor by dozens of other secondary spies who are locating and buying up various equipment; these plans are embodied by the 135 Pakistani nuclear phtsicists who were trained in the United States within the framework of the American-Pakistani bilateral agreement on cooperation. The information obtained by Abdul Kadyr Khan while he worked at the URENKO consortium, a joint enterprise of West Germany, England, and the Netherlands, does not go beyond the technology for enriching uranium by the centrifuge method.

In 1981, attempting to gain approval for his comprehensive program of delivering American weapons and rendering aid to Pakistan with a value of 3.2 billion dollars, President Reagan stated that the "group from Vakh" had been disbanded. "This is not true," Alan Cranston states. "On the contrary, new evidence has been received that this group has been expanded and has stepped up its work."

Who knows? Possibly there will be more arrests and more trials of Pakistani "atomic spies," and more assurances from the White House and its diplomats

in Asia that they are watching carefully to see how the nuclear program of the Islamabad military administration is carried out. But none of this lessens the alarm of Pakistani public opinion, which is already for good reason concerned that American "games" with the "Islamic bomb" can have the most dangerous consequences for their country with its unstable political climate and growing tension on all its borders. And in fact, the consequences can be very serious for the entire region.

11,176
CSO: 1807/38

AIMS OF NUCLEAR PROGRAM REITERATED

GF141336 Karachi MASHRIQ in Urdu 6 Nov 84 p 4

[Editorial: "Pakistan's Nuclear Program"]

[Text] Mr Richard Kennedy, a nuclear affairs specialist in the U.S. State Department, has stated that accounts of Pakistan's nuclear program and dangers from it are highly exaggerated. He also said that Pakistan at present is far from being able to manufacture nuclear weapons. He pointed out that Pakistan is justifiably worried about its own safety. The presence of Soviet forces on its western border has created a new danger for its security; Pakistan is not secure on its eastern border either. The atomic explosion by India in 1974 has also threatened its security. It is therefore of utmost urgency to dispel Pakistan's feelings of insecurity. He added that the United States has signed an arms sale and economic aid pact with Pakistan to free it from its insecurity. Thus, it is not likely that Pakistan will feel a need to develop nuclear arms.

This analysis by Mr Richard Kennedy is most accurate.It should satisfy those circles which are spreading exaggerated reports of the dangers of Pakistan's nuclear program. It should also satisfy those circles who interpret U.S. arms supplies to Pakistan as an arms race, causing tension in the region. Pakistan wants only to strengthen its defenses. For this purpose it is relying on sophisticated conventional arms from the United States. Pakistan has no interest in making nuclear arms.

Pakistan needs nuclear energy to meets its electric power needs. It has made this clear several times but some circles continue to beat the danger drums. It is good news that the Reagan administration believes in Pakistan's assurances. However, the need of the hour is for our close neighbor, India, to also give up its uncertainty. India should also give up its invalid logic of constantly considering Pakistan's defense preparedness and nuclear program a danger to the subcontinent. Only then can an atmosphere of trust and confidence be created between the two countries.

CSO: 5100/4712

BRIEFS

SEMINAR STRESSES ENERGY NEEDS--The 5-day International Seminar on Structural Mechanism for Reactor Technology began in Lahore today. The seminar has been jointly organized by the Pakistan Atomic Energy Commission and the Atomic Research Center of the Federal Republic of Germany. Inaugurating the seminar, the Pakistan Atomic Energy Commission chairman, Munir Ahmad Khan, said Pakistan has no other low-cost alternative solution except generating electricity from atomic energy to meet the shortage of energy. He said 60 percent of Pakistan's export earnings is being spent on oil imports. By the turn of the century, the country will need plants with the capacity to generate up to 18,000 megawatts of electricity while the hydroelectric and steam-based tradtiional thermal power plants will be able to generate only up to 10,000 megawatts of electricity by that time. [Text] [Karachi Overseas Service in Urdu 0800 GMT 18 Nov 84 BK]

CSO: 5100/4713

SOVIETS CONCERNED OVER ISRAELI NUCLEAR POLICY

LD102053 Moscow TASS in English 1847 GMT 10 Nov 84

[Text] New York, 10 Nov (TASS)--Correspondent Vyacheslav Chenyshev reporting: The international community demands an end to the policy of state terrorism pursued by Israel with the U.S. support and complicity. The discussion of the Israeli raid on a nuclear research center in Baghdad at the 39th session of the United Nations General Assembly has shown that a majority of nations are concerned over Tel Aviv's and Washington's aggressive actions in the Middle East which threaten international peace and security.

State terrorism underlies the entire policy of Israel and the United States which are striving to establish domination over the Middle East region, said Diya' Allah al-Fattah, permanent representative of Syria to the United Nations. The delegates of Cyprus, Turkey, Qatar and the United Arab Emirates noted that Israel's piratic raid of 1981 is a component part of Tel Aviv's aggressive policy. A source of special concern, said the delegates of Bulgaria, Saudi Arabia and other countries, is Israel's nuclear ambitions, its attempts at undermining one of the most important international agreements--the treaty on the non-proliferation of nuclear weapons.

The continuation of such a policy by Israel, said Richard Ovinnikov, first deputy permanent representative of the USSR to the United Nations, has become possible only because of all-around support on the part of the United States which shares the responsibility for the crimes Israel systematically commits. Israel's refusal to accede to the treaty on the non-proliferation of nuclear weapons and to put its nuclear installations under the control of the International Atomic Energy Agency are evidence of its striving to acquire nuclear weapons for establishing domination in the Middle East. According to a report of the Carnegie endowment for international peace, out one week ago, Israel already has 20 atomic bombs. According to the estimates of the Georgetown Center for Strategic and International Studies, Israel can stockpile about 60 atomic bombs by the year 2000. It is difficult to imagine the consequences of those adventurist plans if they are thwarted in time. [sentence as received]

A majority of the speakers who took part in the discussion called for most resolute measures to stifle Israel's nuclear ambitions.

CSO: 1812/48

BRIEFS

NEW IAEA GOVERNING BOARD ELECTED--Vienna, 16 Nov (TASS)--A regular session of the committee of the International Atomic Energy Agency on the guaranteed deliveries of nuclear materials, equipment and technology has ended here. It was attended by over 50 countries. Participants in the session analysed questions connected with the development of the principles of international cooperation in the peaceful utilisation of nuclear energy. However, it was pointed out at the session that this cooperation should develop in condition of the strict observance of the regime of non-proliferation of nuclear weapons. A new board--the governing body of the agency--was elected at the session. Jiri Beranek from Czechoslovakia was elected chairman of the board. The next session of the committee will be held from 22 to 25 January, 1985, in Vienna. [Text] [Moscow TASS in English 1034 GMT 16 Nov 84 LD]

CSO: 1812/60

AGREEMENT WITH EGYPT BOOSTS NUCLEAR INDUSTRY

Brussels LE SOIR in French 10/11 Nov 84 p 6

[Article by Guy Duplat]

[Text] In the present dismal swamp in which our nuclear industry is bogged down, the slightest general agreement, the tiniest little contract, even crumbs are of interest. That is why the agreement signed on Thursday by the Egyptian and Belgian ministers of energy, Messrs Abaza and Knoops, will soothe the hearts of the thousands of Belgians still dependent on an industry in a state of crisis. There have only been four other countries which have signed such an agreement with Cairo. It indicates a desire to cooperate in all aspects of the peaceful uses of nuclear energy, from personnel training up to the construction of nuclear power plants. Of course, such an agreement is only an expression of intent, but it still counts for something, as Egypt has decided to engage in an ambitious nuclear equipment program.

At this point, it may be of interest to survey Belgium's possibilities for nuclear technology exports.

Whether we like it or not, Belgium is a country with advanced nuclear technology. Along with telecommunications, chemicals and pharmaceutical products, we might even say that this is the only high-tech industrial sector we have. Companies such as Cockerill, ACEC [Charleroi Electrical Engineering Shops], and Fabricom, the Belgian subsidiary of Westinghouse, the Mol nuclear center, and the research facilities of Belgonucleaire, Electrobel, and Tractionel, have all the knowhow and credentials they need. But the economic crisis and the steep slump in energy demand have slowed down or even stopped equipment programs in the developed countries. In Belgium we are finishing Doel IV and Tihange III. We are participating in the Chooz project, and a decision on Doel V should be forthcoming soon. But that isn't enough to keep our industry working.

Now we are looking abroad, but the developing countries are having a hard time and "complete" financing has to be provided to get an order. Moreover, there are very few countries that operate under a classic parliamentary democracy, and potential clients often have some "sensitive" characteristics that don't help things along.

The Libyan "Case"

The case of the Libyan nuclear power plant has caused a great outpouring of ink. Tripoli wants to buy two Russian plants, each with a 440-MW capacity, and it has asked Belgium to serve as industrial architect for the non-nuclear part of these plants. This job as architect represents a possible contract of 2 to 3 billion francs. And of the approximately 60 billion francs' worth of "non-nuclear" equipment to be ordered, we could expect that Belgium, if its prices are competitive, would get a share anywhere between zero and 100 percent.

Because of American and western pressures in general, though, Belgium is now consulting with other European countries that export nuclear technology, trying to obtain their promise not to take our place in Libya if we give up this potential contract for political reasons. We can well believe that the western countries will not make such a formal commitment. But in the meantime, this unknown remains, and we are now waiting for the essential political decision.

Egypt offers another contract possibility. In December 1983 Westinghouse Belgium made a proposal, in association with the Japanese firm Mitsubishi, along with Spanish, Italian, English, and Belgian subcontractors (ACEC research center) for the construction of one or two power plants, each of 900 to 1000 MW. This would mean a contract worth several hundred billion Belgian francs. Some Belgian ministers have already gone to Egypt in support of this bid, and this week's visit to Belgium by the Egyptian minister, Mr Abaza, offers some additional help. But nothing has yet been decided and the international competition is fierce. The key question will quite certainly be financing. Financial backers would have to guarantee nearly 10 billion francs. But how could they do so, while the Americans (the Eximbank) have so far refused to back credits to Egypt? It is to be hoped that Reagan's reelection will bring the United States to review its position. A more expansive attitude on the part of the Eximbank could lead other countries to follow its example.

Tomorrow, China?

Westinghouse Belgium was hoping to sign a contract with Pakistan, another country that is also highly "sensitive," for it could produce its own atomic bomb, as India now has the bomb. But that contract aborted. However, several dozen Pakistanis have been in Belgium for the past month, taking nuclear engineering courses. These courses are very "peaceful" in scope. The research facilities combined together as Belgatom have already sponsored other similar courses for the Koreans and Chinese from Formosa.

Belgians have also been in Hong Kong for several months. They are working on the preparation of specifications for the construction of a nuclear power plant in the Peoples Republic of China, but which would also be used for Hong Kong's needs. China has announced its firm intention of building two power plants, and its desire to then order four other plants. The French and Americans are battling each other to get these contracts, but it is still possible that the Belgians might get a few crumbs here.

Belgatom also has some partial contracts with Taiwan.

For a while, it seemed likely that Turkey might offer another possibility for our industry, associated in that instance with the French firm, Framatome.. But that deal fell through, and only the Germans (KWU) and the Canadians are still in the running there. That is a rather dismal race, though, since the Ankara government has announced that it is taking another step along the "turnkey" route. It is asking that the builders themselves finance the construction of the Turkish plant, manage its future operation themselves, and then pay themselves by selling the electricity they produce to Turkey. That's certainly something new!

As we see, the outlook for the nuclear industry is gloomy. So the signing of this Belgian-Egyptian agreement appears to be a little ray of sunshine during a siege of very bad weather.

7679
CSO: 5100/2516

INCREASING INDICATIONS COUNTRY WILL BUILD FIFTH NUCLEAR PLANT

Duesseldorf HANDELSBLATT in German 30 Oct 84 p 14

[Article: "Finland Will Need New Nuclear Power Plant Soon"]

[Text] Finland will need a new nuclear power plant by the beginning of the 1990s at the latest. That is the opinion of Anders Palmgren, chairman of the board of by far and away the largest Finnish Power Company Imitran Voima Oy (IVO) of Helsinki.

It is true that no decisions have been made as yet about the construction of this nuclear power plant; however, it seems that the Greens, who have achieved important gains during the latest municipal elections, are for, rather than against, nuclear power. Many firms are interested in this job, among them one of the most powerful companies in the world in this field: Kraftwerk Union (KWU) of Muehlheim. However, the awarding of jobs of this kind is ultimately a political matter. Palmgren admitted as much. That was the way it was when the order for the Loviisa nuclear power plant was awarded to German firms in the late 1960's, before the decision was made to use Soviet technology.

The Finns have had good experience with Russian technology. Such technology consists of two units of 440 MW each, that have, in fact, pressurized water-cooled reactors with six cooling circuits, each block having two turbo units of 235 MW apiece. While the heavy components came from the Soviet Union, Finnish firms have taken over important parts of the construction and the work of additional outfitting: to wit, they have taken over, in addition to the concrete structure, the pumps for the main coolant, as well as the electronics, and also the processing computer. Lead technology and control originate from KWU and Siemens. A special feature is represented by an 'ice containment', which was built under licence from Westinghouse. It is intended as an additional safety measure which acts as a rapid condenser for the steam that would be streaming out in the event of an accident.

The Russo-Finnish nuclear power plant, in the realm of availability, is one of the best in the world. That is to say, it is on a par with some of the high-pressure and boiling water reactors built by KWU. The second Finnish nuclear power plant (which was delivered by Asea of Sweden for use in Olkiluoto and also has two output units rated at 660 MW each), has a high degree of availability, too.

Thus, the use factor for the four nuclear power units (with a combined output of 2210 MW)--ranging from 83 percent to 90 percent--"is one of the highest in the world" (Palmgren). The share of Finnish electricity that is produced by nuclear power is 37 percent. In 1983 in the Federal Republic, the corresponding percentage was in the neighborhood of 20 percent.

An unusual feature of the nuclear power plant in Loviisa is that the core rods, which come from the Soviet Union, can be returned to the supplier after they have been consumed, so that the disposal problem associated with burnt out rods does not arise here. It is a different matter in the Olkiluoto nuclear power plant, where they are "stored for the time being."

Today, Finland is an energy-importing country. Thus, there exists an agreement with the Soviet Union concerning delivery of electricity in the amount of 600 MW per year, while electricity is imported from its Swedish neighbor according to need. Prices for electricity in Finland are among the lowest in Europe. This is due not only to nuclear power, but also to electricity from water power (which entails 31 percent).

Loviisa also has particularly favorable investment costs for the operator: for the prefinanced share, which was delivered by the Soviet Union (that is to say, approximately 25 percent of the total investment sum of 1.5 billion DM), the operating company pays merely 2,5 percent interest for 20 years. That is perceived by Palmgren as being especially favorable.

IVO, which also owns two coal generating plants as well as a number of water power plants and thus provides a share of Finnish power generation ranging from 40 to 45 percent, is now even competing--together with the Soviet supplier for Loviisa--for construction of a nuclear power plant in Yugoslavia (Prevlaka). It is common opinion that the technical collaboration with the Soviet Union has succeeded so well that one might even be able to export the same kind of power plants or similar ones.

12521
CSO: 5100/2515

AKKUYU TALKS CONTINUE WITH KWU, AECL, WESTINGHOUSE

Istanbul DUNYA in Turkish 20 Oct 84 p 7

[Text] Ankara (ANKARA AGENCY) - Talks will resume on Monday with the West German firm KWU [Kraftwerk Union] on building the nuclear power plant projected for Mersin-Akkuyu.

According to information obtained, the "alternative bid" to be presented to Turkish government authorities on Monday by the head of KWU's investment office, Hirschmann, may offer a significant drop in the per-megawatt price of the plant.

The per-megawatt price in KWU's first proposal for building the 970-megawatt power plant was $860,800, or 103.1 million liras, which was later reduced to $806,200, or 78.4 million liras, according to information obtained.

The new proposal to be presented to the government by KWU reportedly may reduce the per-megawatt cost even further in terms of foreign currency.

Authorities say that with the "alternative bid," government fund issues are largely "nil" in the investment period and, in reference to the projected establishment of a joint Turkish-German company to take on specific duties in the construction and operation period, add, "We do not think any firm will reach the point that we can."

Westinghouse Talks on Wednesday

Meanwhile, officials of the U.S. firm Westinghouse will reportedly meet with Energy and Natural Resources Minister Cemal Buyukbas on Wednesday.

Westinghouse officials are to come from the United States for the meeting to explain their views on the government's latest proposal.

Government Proposal Hard to Accept

Meanwhile, despite the announcement by Energy and Natural Resources Minister Cemal Buyukbas that the government's proposal to have "a private firm" build the plant and run it for 15 years had met preliminary approval in principle by the Canadian firm AECL [Atomic Energy of Canada Limited], it is argued that getting this proposal accepted is difficult.

Credit, political risk factors and uncertainty about future government decisions are cited as the primary difficulties.

In fact, Graeme Anderson, director of the Energy Group of the British firm Northern Engineering Industries which joined AECL in the bid, indicated in a study of the topic he conducted some time ago that finding the money required was very difficult. "I have discussed Ozal's proposal with bankers. I am not sure we could make it profitable in 15 years," he said. Anderson added also that the political risk would not be ignored.

Yildirim Akturk, general coordinator of AECL's Turkish partner ENKA [Construction and Industry Inc], also noted in a statement that repayment of interest related to the credit to be used would be spread out over time and credit could not be easily found for this reason.

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CSO: 5100/2512

END